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10/566,482	01/31/2006	Michael Bazylenko		5757

7590  
Michael Bazylenko  
20 May Gibbs Way  
French Forest, 2086  
AUSTRALIA

06/30/2010

EXAMINER

BHAT, NARAYAN KAMESHWAR

ART UNIT

PAPER NUMBER

1634

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Supplemental  
Notice of Allowability**

**Application No.**

10/566,482

**Examiner**

NARAYAN K. BHAT

**Applicant(s)**

BAZYLENKO, MICHAEL

**Art Unit**

1634

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/7/2010.
2. ☒ The allowed claim(s) is/are 1,4-6,8,10-15 and 22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Narayan K. Bhat/  
Examiner, Art Unit 1634

### **SUPPLEMENTAL NOTICE OF ALLOWANCE**

This supplemental office action is written to correct the status of claim 22, which was identified only in the Claim Status section of Notice of Allowance mailed on January 19, 2010 as being allowed and also being cancelled. Claim 22 is correctly cited as allowed in the Index of Claims and PTO-37 form and in other sections of Notice of Allowance mailed on January 19, 2010. The cancellation of claim 22 in the Claim Status section of Notice of Allowance is a typographical error on the part of the Examiner. With this action it is reiterated that the claim 22 is allowed. As discussed below in detail, claims 1, 4-6, 8, 10-15 and 22 are allowed.

This Supplemental Notice of Allowance corrects the status of claims 2 and 9 as cancelled and claim 22 as allowed, which were incorrectly listed in the previous Notice of Allowance mailed on January 19, 2010. These changes are made in the "Claim Status" section below.

It is also noted that neither the Search Notes nor Interview Summary are included with this Supplemental Notice of Allowance because they are already part of the record. Consequently, Form PTOL-37 has been edited to indicate that no Interview Summary is included with this Supplemental Notice of Allowance.

The remainder of this Supplemental Notice of Allowance is unchanged.

This action is in response to papers filed September 28, 2009, November 2, 2009 and January 8, 2010.

Applicant has filed Request for Continued Examination after Notice of Allowance was mailed on August 11, 2009. Claims were amended to replace "half" wavelength to the order of wavelength. In the claim listing of November 2, 2009, the Applicant has added two new claims with incorrect numbers 2 and 9, which have been previously cancelled. With the Applicant's approval to correspond via e-mail, proposed claim amendments which would place claims in condition for allowance were sent to the Applicant on January 6, 2010. Applicant accepted the proposed amended claims and authorized to cancel any claims if needed via e-mail on January 7, 2010. All electronic correspondence between the Examiner and the Applicant are attached to this action and made of record.

#### ***Claim Status***

New claims incorrectly numbered as 2 and 9 in the claim listing of November 2, 2009 by the Applicant have been renumbered as claims 21 and 22. Claim 1 has been amended to include the limitation of claim 21 and therefore claim 21 is cancelled. Claims 2 and 9, listed as new in the claim listing of November 2, 2009, have also been cancelled. Claims 1, 4-6, 8, 10-15 and 22 are allowed.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Claims 1, 4-6, 8, 10-15 and 22 have been renumbered Claims 1-12 according to 37 C.F.R. 1.126 (see MPEP 608.01 (j) and 608.01 (n) IV).

Examiner's amendments were authorized by the Applicant on January 7, 2010. The application has been amended as follows:

#### ***Specification New Matter***

The amendment filed November 2, 2009 is objected under 35 U.S.C. 132(a) because it introduces new matter into the specification. Applicant has cancelled the new matter via e-mail on January 7, 2010 and therefore new matter objection/rejection is moot.

Claims have been written as follows:

1. (Currently amended) A monolithically integrated biochip for testing biological substances comprising a plurality of binding sites, optical means for determining a specific binding event at each binding site, wherein the plurality of binding sites are monolithically integrated by processing one substrate with the optical means for

determining a specific binding event which comprise at least one microcavity light source, at least one photodetector and at least one planar waveguide, an evanescent field of light propagating in the waveguide interacting with the biological substance under test, and wherein the ~~dimensions of the microcavity light source are in the order of half wavelength of light to be emitted~~ is a photonic band gap microcavity light source.

2-3. (Cancelled).

4. (Original) A biochip in accordance with claim 1 wherein either or both the light sources and the photodetectors are implemented in a thin film semiconductor layer.

5. (Original) A biochip in accordance with claim 4 wherein the light sources and photodetectors are implemented in the same semiconductor thin film layer.

6. (Original) A biochip in accordance with claim 4 wherein the semiconductor thin film material comprises semiconductor polymer.

7. (Cancelled).

8. (Original) A biochip in accordance with claim 4 wherein the ~~thin film~~ photodetector is a microcavity photodetector.

9. (Cancelled).

10. (Previously amended) A biochip in accordance with claim 1 wherein the means for determining a binding event at each site comprise means for determining a refractive index change associated with a binding event.

11. (Original) A biochip in accordance with claim 10 wherein the means for determining refractive index change comprise a first planar waveguide on surface of which the

binding event occurs, a second planar waveguide located below the first waveguide and separated by coupling layer of lower refractive index than that of the two waveguides.

12. (Original) A biochip in accordance with claim 10 wherein the means for determining refractive index change comprise a first planar waveguide on surface of which the binding event occurs, a grating formed in said waveguide, a second planar waveguide located below the first waveguide and separated by coupling layer of lower refractive index than that of the two waveguides.

13. (Previously amended) A biochip in accordance with claim 1 wherein the means for determining a binding event further comprise a reference light paths provided at each binding site for error correction.

14. (Currently amended) A biochip in accordance with claim 1 wherein the biochip further comprises a ~~further~~ plurality of electrodes to control hybridization conditions at each binding site.

15. (Original) A biochip in accordance with claim 14 wherein the electrodes comprise resistive heater electrodes formed underneath individual binding sites or groups of binding sites.

16-21. (Cancelled).

22. (New) A biochip in accordance with claim 8 wherein the microcavity photodetector is a photonic band gap microcavity photodetector.

### ***REASONS FOR ALLOWANCE***

The following is an examiner's statement of reasons for allowance:

Additional prior art considered: Sugita (USPN 7,430,039 effective filing date Apr. 22, 2004).

Sugita et al teaches photonic band microcavity light source 702 integrated on a substrate and photodetectors are placed on the surface of the substrate (Fig. 7 and Example 5 and column 6, lines 25-38). Sugita does not suggest or obviate a plurality of binding sites monolithically integrated with the light source and a photodetector and a waveguide as claimed.

None of the references of the record either teach or suggest or obviate a plurality of binding sites monolithically integrated with a photonic band gap microcavity light source and a photodetector and a waveguide as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Claims 1, 4, 5, 6, 8, 10-15 and 22 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Narayan K. Bhat whose telephone number is (571)-272-5540. The examiner can normally be reached on 8.30 am to 5 pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen can be reached on (571)-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Narayan K. Bhat/

Examiner, Art Unit 1634

/Robert T. Crow/

Primary Examiner, Art Unit 1634